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SPECIFICATION FOR PEANUT BUTTER

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Indian Standard

SPECIFICATION FOR PEANUT BUTTER

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 29 January 1979, after the draft finalized by the Nutrition Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Manufacture of peanut butter has recently started in India although it has been used extensively in western countries. Peanut butter is a semi-solid food product of plastic consistency and is rich in protein and fat. It is mainly used for table purposes to prepare sandwiches or as a spread on bread or toast. It can also be used as an ingredient in preparing various Indian recipes or as a relish with Indian breakfast foods like *idli*, *chapati*, etc.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for peanut butter.

2. ESSENTIAL INGREDIENTS

2.1 The following materials shall be used in the preparation of peanut butter.

2.2 Groundnut Kernels — The groundnut kernels to be used for preparation of peanut butter shall be of the hand-picked selected kernel (HPS) variety and should be selected by either visual or ultraviolet light inspection, electronic sorting or other means so as to reduce the proportion of immature, shrivelled and mouldy kernels which may carry high levels of aflatoxin.

2.3 Dairy Salt — Conforming to **2.3** of IS : 253-1970†.

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*Rules for rounding off numerical values (*revised*).

†Specification for edible common salt (*second revision*).

3. OPTIONAL INGREDIENTS

3.1 In addition to the essential ingredients specified in **2**, any of the following ingredients may be added to peanut butter:

a) Sugar,

b) Liquid glucose,

c) Permitted food flavours,

d) Edible oils and fats, and

e) Fat-soluble vitamins and minerals.

3.2 Emulsifiers — The following emulsifiers in the quantities given against them may be added:

a) *Mono- and di-glycerides of fatty acids* — Not exceeding 2 percent of the mass of finished product,

b) *Lecithins and components of commercial lecithin, food grade* — Not limited,

c) *1,2-Propylene glycol esters of fatty acids* — Not exceeding 2 percent of the mass of finished product, and

d) *Esters of fatty acids with poly-alcohols other than glycerol* — Not exceeding 1 percent of the mass of finished product.

3.2.1 The combined percentage of all the emulsifiers added should not exceed 2 percent in the finished product.

3.3 Preservatives — The following preservatives in the quantities given against each may be added:

a) Sorbic acid and its sodium, potassium and calcium salts	Not exceeding 0·1 percent, individually or in combination (expressed as the acids), of the mass of finished product
b) Benzoic acid and its sodium and potassium salts	

3.4 Antioxidants — The following antioxidants in the quantities given against each may be added:

a) *Propyl, octyl and dodecyl gallate* — Not exceeding 0·01 percent, individually or in combination, of the fat percent; and

b) *Butylated hydroxy anisole* (*BHA*) — Not exceeding 0·02 percent, of the fat percent.

3.5 Other Additives — The following other additives may be added in quantities according to taste:

a) Citric and lactic acids and their potassium and sodium salts;

b) L-Tartaric acid and its sodium and potassium salts; and

c) Sodium hydrogen carbonate, sodium or calcium carbonate and sodium hydroxide.

4. GENERAL REQUIREMENTS

4.1 Organoleptic Quality — Peanut butter shall be free from the skins or shells of peanuts and from any other foreign matter, and shall have a yellowish-brown colour. It should be easily spreadable and there should not be any undesirable lumps. The product shall not show any sign of separation of fat.

4.1.1 The product shall have the characteristic flavour of fresh roasted peanuts, and shall be free form objectionable flavour and taste.

4.2 Premises — The premises under which peanut butter is manufactured, packed, stored and distributed and the equipment used during processing, shall be maintained under hygienic conditions (*see* IS:2491-1973*).

4.3 Peanut butter shall also conform to the requirements given in Table 1.

TABLE 1 REQUIREMENTS FOR PEANUT BUTTER

(*Clauses* 4.3, 7.1 *and* A-1.1)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST (REF TO APPENDIX)	
			This Standard	IS:4684-1975*
(1)	(2)	(3)	(4)	(5)
i)	Moisture, percent by mass, *Max*	3·0	A	—
ii)	Fat, percent by mass (on dry basis), *Min*	40	B	—
iii)	Protein (N×6·25), percent by mass (on dry basis), *Min*	25	—	C
iv)	Total ash, percent by mass (on dry basis), *Max*	5	—	D
v)	Acid value of extracted fat, *Max*	4	—	G
vi)	Aflatoxin content, µg/kg (on dry basis), *Max*	30	—	J

*Specification for edible groundnut flour (expeller pressed) (*first revision*).

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*Code for hygienic conditions for food processing units (*first revision*).

5. PACKING AND MARKING

5.1 Packing — The material shall be packed in wide-mouthed glass jars or any other suitable container of any size and shape, as agreed to between the purchaser and the supplier. The container shall have an air-tight seal in order to avoid oxidative rancidity and to preserve freshness.

5.2 Marking — The container shall be marked with the following:

a) Name of the material;

b) Net mass of the material;

c) Name and address of the manufacturer;

d) Trade name, if any;

e) Date of manufacture; and

f) Any other details required under the Standards of Weights and Measures (Packaged Commodities) Rules, 1977.

5.2.1 The packages may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

6. SAMPLING

6.1 Representative samples of the material will be drawn as prescribed under **2** of IS:3507-1966*.

7. TESTS

7.1 Tests shall be carried out as prescribed in col 4 and 5 of Table 1.

7.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS:1070-1977†) shall be used in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

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*Methods of sampling and test for butter.

†Specification for water for general laboratory use (*second revision*).

APPENDIX A

[*Table* 1, *item* (i)]

DETERMINATION OF MOISTURE

A-1. PROCEDURE

A-1.1 Place about 20 g ignited sand in a dish provided with a glass stirring rod and weigh. Weigh about 5 g peanut butter to the nearest mg into the dish and dry for 1 hour in a drying oven at 105°C. Cool in a desiccator and weigh. Replace for a further half hour in the drying oven at 105°C. Cool in desiccator, and weigh again. Repeat this treatment until the mass becomes constant, that is, to a change in mass not exceeding 0·1 percent. Keep the residue for the other tests which are to be performed on a moisture-free basis (*see* Table 1).

A-2. CALCULATION

A-2.1 Moisture, percent by mass $= \frac{(M_1 - M_2) \times 100}{M_1}$

where

M_1 = mass in g of the sample, and

M_2 = mass in g of the residue.

APPENDIX B

[*Table* 1, *item* (ii)]

DETERMINATION OF FATS

B-1. REAGENT

B-1.1 Diethyl Ether

B-2. APPARATUS

B-2.1 Round Bottom Flask — 250-ml.

B-2.2 Sintered Glass Filter Crucible – Maximum pore size 15 to 40 mm, capacity 30 to 40 ml.

B-3. PROCEDURE

B-3.1 Wash the residue after determination of moisture as in **A-1.1** first with 7 × 20 ml and then with 4 × 25 ml of diethyl ether through a weighed filter crucible and collect the filtrate in a weighed round-bottom flask. Dry the residue to constant mass in the oven at 150°C, that is, to a maximum change in mass of 0·1 percent.

B-4. CALCULATION

B-4.1 Fat, percent by mass $= \dfrac{(M_3 - M_2) \times 100}{M_1}$

where

M_1 = mass in g of the sample taken for the test in **A-1.1**,

M_2 = mass in g of the round-bottom flask, and

M_3 = mass in g of the round-bottom flask with residue.

(*Continued from page* 2)

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INDIAN STANDARDS ON NUTRITION

IS:	
3137-1974	High protein mixes for use as food supplement (*first revision*)
4684-1975	Edible groundnut flour (*expeller pressed*) (*first revision*)
4874-1968	Cottonseed flour (*expeller pressed*) (*first revision*)
4875-1975	Edible groundnut flour (*solvent extracted*) (*first revision*)
4876-1968	Cottonseed flour (*solvent extracted*) (*first revision*)
6108-1971	Edible sesame flour (*solvent extracted*)
6109-1971	Edible sesame flour (*expeller pressed*)
7021-1973	Protein rich foods supplements for infants and preschool children
7481-1974	Method for determination of protein efficiency ratio (PER)
7482-1974	Protein-based beverages
7487-1974	Protein rich biscuits
7835-1975	Edible low-fat soya flour
7836-1975	Edible medium-fat soya flour
7837-1975	Edible full-fat soya flour
8211-1976	Edible soya protein isolate
8212-1976	Edible groundnut protein isolate
8220-1976	Protein rich concentrated nutrient supplementary foods
8222-1976	Edible leaf protein concentrate
8664-1977	Edible coconut flour (*expeller pressed*)
8665-1977	Protein fortified bread
8676-1977	Edible coconut flour (*solvent extracted*)
8677-1977	Edible sunflower flour (*solvent extracted*)
8678-1977	Vegetable protein-based yoghurt (vegetable curds)